

A lesion nematode Pratylenchus vulnus

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Pratylenchus vulnus Allen and Jensen 1951, is a pest of fruit, nut, ornamental, and vegetable crops in the United States and many other parts of the world (1,12). It was described from the roots of walnut (Juglans hindsii Jepson) in California, where it is an important pest of fruit crops and is the causal agent for root-lesion disease of walnuts (1,11). This disease is characterized aboveground by stunting, dieback, chlorosis, and yield reduction. The roots exhibit large black lesions with longitudinal cracking and necrosis (11).

HOSTS & DISTRIBUTION:

Pratylenchus vulnus has been reported from Australia, Belgium, Brazil, Cuba, Egypt, India, Italy, Japan, Mexico, New Zealand, Philippine Islands, South Africa, Sweden, United Arab Republic, and the United States (3,7,17). In the United States, it has been reported from Arkansas, California, Florida, Georgia, Maryland, North Carolina, Oregon, Utah, and Wisconsin (2,3,4,8,10,11,12,15,22).

Pratylenchus vulnus is reported to infect over 80 species and varieties of ornamentals, fruits, nuts, vines, and vegetable crops. Among them are: walnut, peach, fig, citrus, rose, strawberry, boxwood, olive, narcissus, grape, almond, cherry, weeping willow, raspberry, boysenberry, apple, quince, prune, pear, forsythia, opium poppy, and avocado (1,5,9,13,14,16,18,19,20,21,23).

SYMPTOMS AND PATHOGENICITY:

The manner in which P. vulnus affects plant roots is similar to that inflicted by other lesion nematodes within the genus Pratylenchus (6,7,11). This nematode is generally a parasite of the roots of woody plants although it has been known to invade the underground portion of the forsythia stem (15). It parasitizes the cortical area of the root where it destroys cells and creates cavities (3,15,16). Dark colored lesions appear on the root surfaces. The lesions enlarge, become necrotic, and can eventually girdle the roots. In greenhouse tests, 29 of 60 plant species were susceptible to P. vulnus, and in most instances, necrosis of the roots was associated with the infection (8). The nematodes usually congregate in cavities and are generally, but not always, aligned longitudinally to the axis of the root (3). The tops of infected plants show stunting, chlorosis, and twig dieback (3,21).

Pratylenchus vulnus is believed to be a threat to the citrus industry in Italy, where it has been associated with decline of sour orange seedlings (6,7). Damage to young trees was reported to be similar to damage caused by P. coffeae, in that seedling trees were stunted. Feeder roots had been invaded by all active stages of the nematode. The rootlets exhibited necrotic lesions and cavities in the cortex. No evidence of injury to the stele was observed (7). Up to 1,000 nematodes per gram of roots were recovered. Population density on young growing trees was observed to increase faster than the tolerance limit of the plants. After limited tests of citrus species, only sour orange (Citrus aurantium L.) was found to be capable of supporting a heavy population (7).

SURVEY AND DETECTION:

- 1) Examine plants, especially woody ornamentals, fruit trees, and vegetable crops for stunting, chlorosis, dieback, or general unthriftiness.
- 2) Submit approximately one pint of roots with adherent soil to a nematology laboratory.

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